

# Notice of Allowability

Application No.

09/630,407

Applicant(s)

NOGUCHI ET AL.

Examiner

Marie R. Yamnitzky

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## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to RCE and amendment filed June 03, 2005.
2. ☒ The allowed claim(s) is/are 1 and 4-14.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 08042005.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

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A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's amendments filed on April 05, 2005 and June 03, 2005 have been entered.

Applicant's amendment filed April 05, 2005 amends claims 1 and 5.

Applicant's amendment filed June 03, 2005 further amends claim 1. (One of the indicated changes to claim 1 and the indicated change to claim 5 as set forth in the June 03<sup>rd</sup> amendment are the same as made in the April 05<sup>th</sup> amendment.)

The rejection under 35 U.S.C. 112, 1<sup>st</sup> paragraph, has been reconsidered by the examiner in light of the amendments made to claim 1 and is withdrawn. With the narrowed scope of the repeating units of formulae (1) and (3), given the data set forth in the specification, and given known properties such as Hammett constants, which are based on substitution position on a phenyl group and from which the direction of shift in absorption edge wavelength can be predicted for various substituents, it would not require undue experimentation to make and use the invention as presently claimed.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR

1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for the examiner's amendment to claim 1 was given in a telephone interview with Jennifer Hayes on August 04, 2005. The changes to the specification, which correct errors of a spelling, grammatical and/or typographical nature, were not discussed during the telephone interview.

The specification has been amended as follows:

Page 2, line 14: "(1991).WO9013148" has been changed to --(1991). WO 9013148--.

Page 2, line 19: "a" has been deleted.

Page 2, line 21: "needs" has been changed to --need--.

Page 4, line 16: "fluorescent substances" has been changed to --fluorescent substance--.

Page 21, line 1: --from-- has been inserted after "independently".

Page 27, line 6: --from-- has been inserted after "independently".

Page 35, line 11: "life ,when" has been changed to --life, when--.

Page 36, line 23: "agents" has been changed to --agent--.

Page 37, line 9: --be-- has been inserted after "also".

Page 40, last line: "layer/ / cathode" has been changed to --layer/cathode--.

Page 41, line 13: --be-- has been inserted after "each".

Page 41, line 18: "an" has been changed to --a--.

Page 44, line 7: "an" has been changed to --a--.

Page 61, line 18: "spectral" has been changed to --spectrum--.

Claim 1 has been amended as follows; the text of claims 4-14 remains as set forth in the amendment filed June 03, 2005:

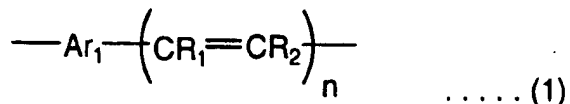
1. (Currently Amended) A polymeric fluorescent substance which emits a fluorescence in solid state and has a number-average molecular weight of  $10^3$  to  $10^8$  in terms of polystyrene, wherein the substance contains two repeating units represented by the following formula (1) and formula (3), and these repeating units are so selected as to satisfy the following conditions (a) to (c):

(a): the total amount of the repeating units represented by the formulae (1) and (3) is 50 mol% or more of the amount of the whole repeating units,

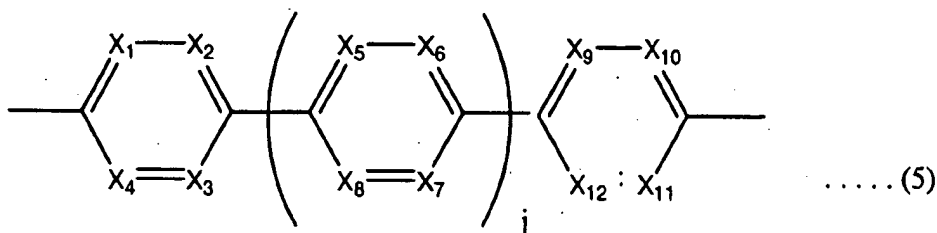
(b): the amount of the repeating unit represented by the formula (3) is more than 0.1 mol% and less than 9 mol% based on the total amount of the repeating units represented by the formula (1) and formula (3), and

(c): when the absorption edge wavelength of a polymer solely composed of a repeating unit represented by the formula (1) is represented by  $\lambda_1$  (nm) and the absorption edge wavelength of a polymer solely composed of a repeating unit represented by the formula (3) is represented by  $\lambda_2$  (nm), the following relation is satisfied:

$$1239/\lambda_1 \geq 1239/\lambda_2 + 0.05$$



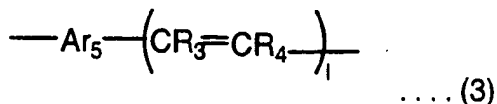
in the formula, Ar<sub>1</sub> is a group represented by the following formula (5); R<sub>1</sub> and R<sub>2</sub> each independently represents a group selected from the group consisting of a hydrogen atom, alkyl group having 1 to 20 carbon atoms, aryl group having 6 to 60 carbon atoms, heterocyclic compound group having 4 to 60 carbon atoms and cyano group; and n is 0 or 1,



in the formula, X<sub>1</sub> to X<sub>12</sub> each independently represents C-R<sub>7</sub>, and at least one of X<sub>1</sub> to X<sub>12</sub> is C-R<sub>7</sub>; wherein, each R<sub>7</sub> independently represents a group selected from the group consisting of a hydrogen atom, alkyl group having 1 to 20 carbon atoms, alkoxy group having 1 to 20 carbon atoms, alkylthio group having 1 to 20 carbon atoms, alkylsilyl group having 1 to 60 carbon atoms, alkylamino group having 1 to 40 carbon atoms, aryl group having 6 to 60 carbon atoms, aryloxy group having 6 to 60 carbon atoms, arylalkyl group having 7 to 60 carbon atoms, arylalkoxy group having 7 to 60 carbon atoms, arylalkenyl group having 8 to 60 carbon atoms, arylalkynyl group having 8 to 60 carbon atoms, arylamino group having 6 to 60 carbon atoms, heterocyclic compound group having 4 to 60 carbon atoms and cyano group; at least one R<sub>7</sub> is a

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group other than a hydrogen atom; ~~when plurality of R<sub>7</sub>'s are present, they may be same or different; the group represented by the formula (5) has at least one substituent other than a hydrogen atom, and when the group (5) has a plurality of substituents, they may be the same or different;~~ adjacent 6-membered rings may be mutually connected directly or via a substituent to form a ring; j is an integer from 0 to 3; wherein, X<sub>1</sub> and X<sub>9</sub>, X<sub>2</sub> and X<sub>10</sub>, X<sub>3</sub> and X<sub>11</sub>, and X<sub>4</sub> and X<sub>12</sub> are not respectively the same simultaneously, and X<sub>1</sub> and X<sub>12</sub>, X<sub>2</sub> and X<sub>11</sub>, X<sub>3</sub> and X<sub>10</sub>, and X<sub>4</sub> and X<sub>9</sub> are not respectively the same simultaneously,



in the formula, Ar<sub>5</sub> represents an arylene group having 6 to 60 carbon atoms contained in the main chain; R<sub>3</sub> and R<sub>4</sub> each independently represents a group selected from the group consisting of a hydrogen atom, alkyl group having 1 to 20 carbon atoms, aryl group having 6 to 60 carbon atoms, heterocyclic compound group having 4 to 60 carbon atoms and cyano group; 1 is 1.

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Claim 1 is amended to delete language which is superfluous and/or potentially confusing given applicant's previous amendment to claim 1 requiring  $X_1$  to  $X_{12}$  to each independently represent C-R<sub>7</sub>.

Claims 1 and 4-14 are allowed. Allowed claims 1 and 4-14 are renumbered as 1-12, respectively.

Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

The current fax number for all official faxes is (571) 273-8300. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY  
August 04, 2005



MARIE YAMNITZKY  
PRIMARY EXAMINER

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